

NOTES AND KEYS TO THE SPECIES OF *CAROLINAIA*  
(HOMOPTERA: APHIDIDAE)<sup>1</sup>

CLYDE F. SMITH

Department of Entomology, North Carolina State University, Raleigh,  
North Carolina 27650.

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*Abstract.*—Keys are given to the stem mothers, alate migrants and alate alienicola of the known species of *Carolinaia*. The stem mother and alate migrants of *Carolinaia carolinensis*, new species, are described from *Rhus radicans* L., Raleigh, North Carolina.

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The genus *Carolinaia* was described by Wilson (1911: 61) with *Carolinaia caricis* Wilson (1911: 61) as the type-species. *Carolinaia* may be characterized as follows: Head without prominent antennal tubercles; antennae with 5 or 6 segments; rhinaria subcircular; venation of fore wings normal, hind wings with the cubitus absent; siphunculi elongate, usually slightly swollen near the distal end; cauda rather broadly conical. It is quite difficult to distinguish the apterous alienicola of *caricis* Wilson and *rhois* Tissot. Hottes (1926: 17) described *Carolinaia modestus* which is now placed in *Myzodium* Börner (1950: 11).

*Carolinaia caricis* Wilson 1911: 61

Fig. 1

*Carolinaia caricis* was described from *Carex* sp. I have transferred *C. caricis* from poison ivy (*Rhus radicans* L.) to *Carex* spp. However, it can live continuously on Cyperaceae in the tropics.

I have seen specimens from Florida, North Carolina, Pennsylvania, South Carolina, Puerto Rico, and Venezuela.

*Carolinaia carolinensis* Smith, NEW SPECIES

Fig. 2

Stem mother.—Color of living material, yellowish-orange; cleared specimens dark on tarsi, pale on appendages and body, appendages slightly darker than body.

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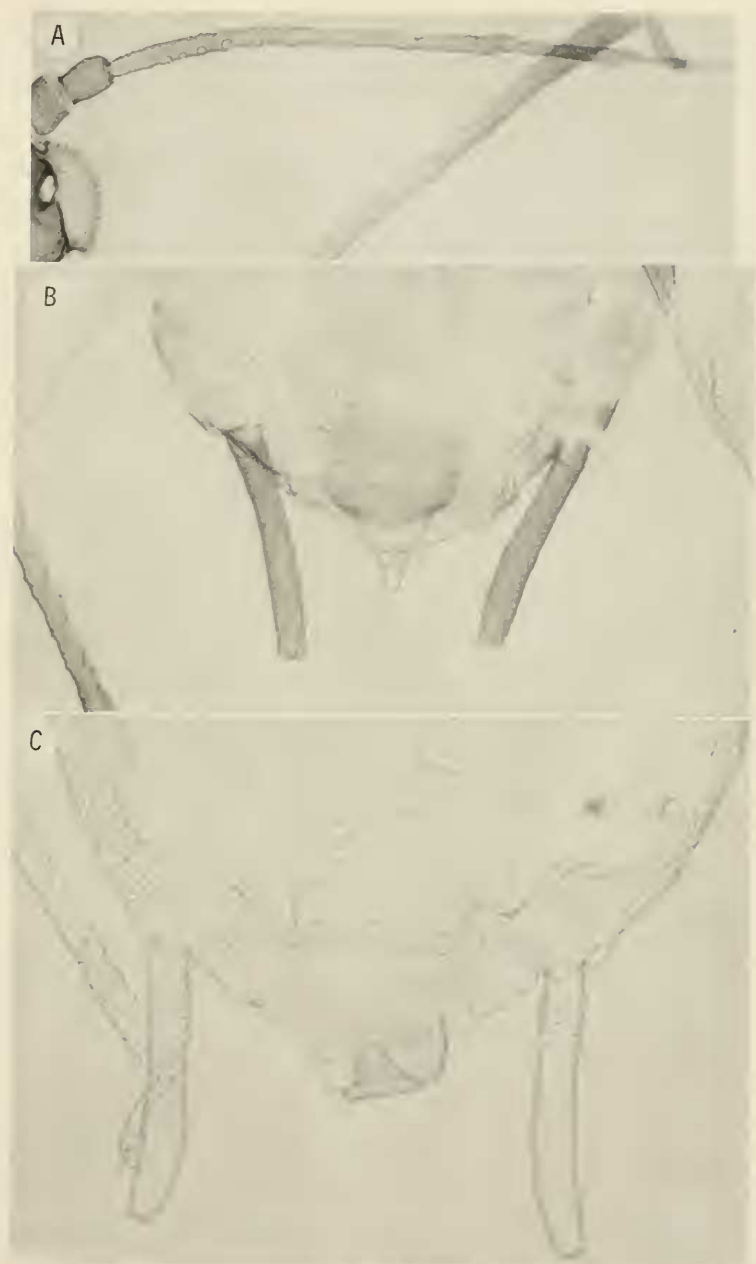


Fig. 1. *Carolinaia caricis* on *Rhus radicans*. A, Antenna, alate vivipara. B, Tip of abdomen, alate vivipara. C, Tip of abdomen, stem mother.



Fig. 2. *Carolinaia carolinensis* on *Rhus radicans*. A, Antenna, alate migrant. B, Tip of abdomen, alate migrant. C, Tip of abdomen, stem mother.

Measurements of one specimen (measurements in millimeters): Body, 2.18; width of head, 0.43; antennal segment III, 0.33; antennal segment IV, 0.18; antennal segment V, 0.15 + 0.23; length of R IV + V, 0.08; hind tibiae, 0.75; metatarsomere, 0.09; siphunculus, 0.42; cauda, 0.13 and bearing 4 setae.

Alate migrants.—Color of living specimens, yellowish, may have a light greenish tinge, dark patch on abdomen without greenish area around base of siphunculi; color of cleared specimens, dark on antennae, siphunculus, tips of tibiae, distal  $\frac{2}{3}$  of meso- and metafemora, sclerites on sides of abdomen, patch on dorsum of abdomen, dorsum of tergite VIII.

Measurements (the first measurement is that of the holotype, measurements in parenthesis represent the range of 8 specimens): Length of body, 1.75 (1.58–1.82); width of head, 0.36 (0.36–0.38); antennal segment III 0.37 (0.34–0.37); antennal segment IV, 0.18 (0.17–0.20); antennal segment V, 0.19 (0.18–0.21); antennal segment VI, 0.18 (0.15–0.18) + 0.47 (0.40–0.50); R IV + V, 0.08 (0.07–0.08); hind tibia, 0.83 (0.82–0.86); metatarsomere II, 0.08 (0.08); siphunculus, 0.26 (0.24–0.26); cauda, 0.11 (0.9–0.11) and bearing 4 setae. Secondary rhinaria on antennal segment III, 31 (23–31); antennal segment IV, 12 (9–12); antennal segment V, 6 (5–6); base of antennal segment VI, 0–1.

Types.—Holotype slide No. 58-82, poison ivy, Raleigh, North Carolina, 5-11-58, CFS. Specimen at 6 o'clock, deposited in U.S. National Museum of Natural History. Paratypes in USNM; Frost Entomological Museum, Pennsylvania State University; Florida State Collection of Arthropods, Gainesville; North Carolina State University, Raleigh; and the author.

Collections.—This species causes a slight cupping of the leaves of poison ivy (*Rhus radicans* L.) on the ground, whereas other species of *Carolinaia* on poison ivy have only been found on leaves of poison ivy climbing on trees. Collections at Raleigh, North Carolina, May 3, 1950, May 11 and May 17, 1958 by C. F. Smith. I believe this species migrates to some specie of Cyperaceae.

Etymology.—This species is named for North Carolina, the state in which the type-locality occurs.

*Carolinaia cyperi* Ainslie 1915: 85

Fig. 3

*Carolinaia cyperi* was described from *Cyperus esculentus* L. I believe it is confined to Cyperaceae. Records of it occurring on other hosts are probably due to "strays" or accidental visitors. The apterae of *cyperi* are black; whereas the apterae of other species of *Carolinaia* are yellowish to pale tan. *Carolinaia cyperi* has been recorded from the southeastern United States, the Caribbean Islands, and Central and South America.

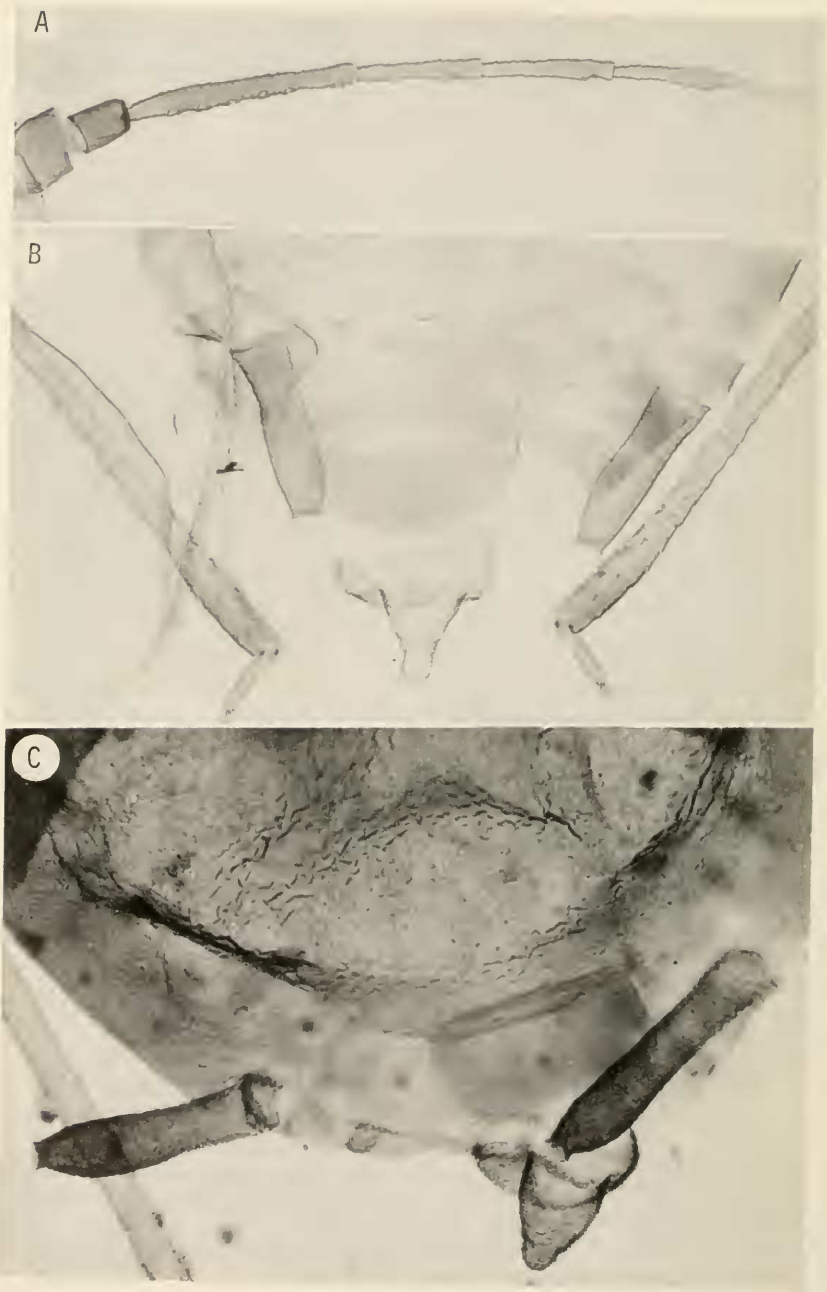


Fig. 3. *Carolinaia cyperi* on *Cyperus* sp. A, Antenna, alate migrant. B, Tip of abdomen, alate migrant. C, Tip of abdomen, apterous vivipara (stem mother unknown).



Fig. 4. *Carolinaia rhois* on *Rhus radicans*. A, Antenna, alate migrant. B, Tip of abdomen, alate migrant. C, Tip of abdomen, stem mother.

*Carolinaia rhois* Tissot 1928: 1

## Fig. 4

*Carolinaia rhois* was described from *Rhus radicans* L. I have made transfers from *R. radicans* to *Cyperus* spp. *Carolinaia rhois* has been recorded from Florida, Louisiana, Maine, North Carolina, Ohio, and Pennsylvania.

KEY TO SPECIES OF *CAROLINAIA*

## STEM MOTHERS

- 1. Body smooth ..... 2
- Body rugose ..... *caricis* Wilson
- 2(1). Siphunculi about equally rugose on both sides; antennae 5 or 6-segmented, if 5 segmented, there is an indication of the fusion of antennal segments III and IV ..... *rhois* Tissot
- Siphunculi smooth on cephalic (outer) edge, rugose on caudal (inner) edge, especially in the area of the bulge; antennae 6-segmented ..... *carolinensis*, new species

## ALATE MIGRANTS

- 1. Antennal segment V (and usually IV) without secondary rhinaria ..... 2
- Antennal segments IV and V with secondary rhinaria ..... *carolinensis*, new species
- 2(1). Siphunculi swollen and/or curved, diameter of flange distinctly less than greatest diameter of siphunculus, siphunculus slightly rugose ..... *rhois* Tissot
- Siphunculi nearly straight and cylindrical, diameter of flange subequal to greatest diameter of siphunculus, siphunculus distinctly rugose ..... *caricis* Wilson

## ALATE ALIENICOLA

- 1. Siphunculus black, practically cylindrical ..... 2
- Siphunculus dusky, usually light basally, swollen ..... *rhois* Tissot
- 2(1). Dorsum of abdomen with sclerotic bands ..... *cyperi* Ainslie
- Dorsum of abdomen pale, without sclerotic bands ... *caricis* Wilson

## LITERATURE CITED

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